

more different framework data and corresponding results at: <http://results-espm.save-the-climate.info>

**framework data (input values here: yellow fields)**

global CO2 budget 2020 - 2100	Gt	determination
land-use change (LUC) emissions 2020 - 2100	650	
international shipping and aviation (ISA) emissions 2020 - 2100	0	
global CO2 budget 2020 - 2100 to distribute here	3.3%	-21
<b>weighting population</b> in the weighted key	<b>85%</b>	national budget
potential for net negative emissions	<b>-2%</b>	overshoot
scenario type used for the reference values	<b>RM-5-rad</b>	paths

**Calculation global budget to distribute here:**

LUC and ISA emissions are not considered here. Global LUC and ISA budgets are therefore offset against the global budget.

A value of zero for LUC means that by 2100, in total, net positive LUC emissions are offset by net negative LUC emissions.

**Overshoot:** The percentage stated is applied to the 2019 emissions and represents the minimum of the emissions pathway.

**reference values for the countries with the highest emissions**

target year:	2030	2035	2040	emissions 2019 in Gt	per capita 2019 in t	share in global emissions 2019	share in global population 2019	year emissions neutrality	temporary overshoot in Gt	normalised start change rate 2025
	2019									
China	-45%	-87%	-99%	12	8	32%	18%	2041	14	0.8%
United States	-78%	-100%	-102%	5	15	14%	4%	2036	6	0.3%
EU27	-38%	-61%	-78%	3	7	8%	6%	2059	2	-1.9%
India	37%	26%	6%	3	2	7%	18%	2087	1	4.6%
Russia	-80%	-102%	-102%	2	13	5%	2%	2034	2	3.1%
Japan	-48%	-76%	-91%	1	9	3%	2%	2049	1	-3.0%
sum				25		69%	50%		27	

largest national budgets 2020 - 2100	national budget	weighted key	emissions 2019	scope years
	Gt		Gt	
China	128.8	20.5%	11.81	11
India	101.5	16.1%	2.55	40
EU27	38.2	6.1%	2.91	13
United States	35.6	5.7%	4.97	7
Indonesia	20.3	3.2%	0.64	32
Brazil	15.9	2.5%	0.47	34
Russia	14.8	2.3%	1.86	8
Pakistan	14.7	2.3%	0.20	74
Nigeria	14.3	2.3%	0.13	113
Bangladesh	11.9	1.9%	0.11	109
Japan	11.7	1.9%	1.12	10
Mexico	10.4	1.7%	0.49	21
Philippines	7.9	1.3%	0.15	53
Ethiopia	7.7	1.2%	0.02	416
Egypt	7.6	1.2%	0.24	32
Viet Nam	7.6	1.2%	0.34	23
Iran	7.6	1.2%	0.71	11
Germany	7.5	1.2%	0.70	11
Türkiye	6.8	1.1%	0.41	16
Democratic Republic of the Congo	6.0	1.0%	0.00	1,355
United Kingdom	5.6	0.9%	0.36	16
Thailand	5.5	0.9%	0.29	19
France and Monaco	5.4	0.9%	0.32	17
South Africa	5.3	0.8%	0.48	11
South Korea	5.2	0.8%	0.65	8
Italy, San Marino and the Holy See	5.0	0.8%	0.33	15
Tanzania	4.3	0.7%	0.02	251
Canada	4.2	0.7%	0.61	7
Spain and Andorra	3.9	0.6%	0.25	15
Saudi Arabia	3.9	0.6%	0.58	7
Myanmar/Burma	3.9	0.6%	0.03	112
Sudan and South Sudan	3.8	0.6%	0.02	163
Colombia	3.7	0.6%	0.09	43
Kenya	3.7	0.6%	0.02	188
Argentina	3.6	0.6%	0.18	20
Ukraine	3.6	0.6%	0.21	17
Poland	3.4	0.5%	0.31	11
Algeria	3.4	0.5%	0.18	19
Iraq	3.3	0.5%	0.19	17
Uganda	3.2	0.5%	0.01	451
Malaysia	2.9	0.5%	0.26	11
Australia	2.8	0.4%	0.41	7
Morocco	2.7	0.4%	0.07	38
Afghanistan	2.6	0.4%	0.01	216
sum without EU	533		33	
sum across all countries	629		37	17

**Basic idea behind the ESPM**

The ESPM consists of two steps:

(1) **National budgets:** A predefined global CO2 budget is distributed to countries. The ESPM tool offers the use of a **weighted distribution key** that includes the '**population**' and the '**emissions**' in a base year (here: 2019).

(2) **National paths:** The ESPM tool offers the Regensburg Model Scenario Types to derive plausible national paths that adhere to a national budget.

**Basic idea behind the scenario types RM 1 - 6**

With the help of the RM Scenario Types, emission paths can be determined that meet a given budget. The scenario types differ in the **assumption** about the **property** of the **annual reductions**. This approach is particularly useful when it comes

Brief description of the ESPM:

<http://espm-short.climate-calculator.info>

Brief description of the RM Scenario Types:

<http://rm-scenario-types.climate-calculator.info>

Published paper for the six largest emitters:

<https://doi.org/10.5281/zenodo.4764408>

Overview of web apps for ESPM:

<https://climate-calculator.info>